

77 89 82 82 89  
67 72 82 73 83 84 77 65 83



DECEMBER 1981

BAH  
HUNDUG!

---

(c)1981 TAIG, published by the Twincities Atari Interest Group.  
TAIG is an independent organization with no affiliation to  
ATARI, Inc. Permission is granted to any similar organization with whom  
TAIG exchanges newsletters to copy material in this newsletter.

---

Chairman Steve Crowley 937-1001      Sec. Mike Doleman 861-1893  
Tr. Jim Dahlberg 423-1963  
Software Committee  
Pete Asch 825-1242, Phil Seifert 448-7042, Jim Dahlberg 423-1963

---

#### TAIG LIBRARY PROGRAMS

SCREEN DUMP	Epson MX-80 graphics 8 screen dump routine
DUPANY	Duplicates almost any disk (including "protected ones")
FLAGS	Country flag guessing game
TYPEWRITER	Mini word processor program
OTHELLO	Plays game of Othello
SIMON	Musical tone memory game
BUG	Catch the spider game
SURROUND	Try to make your opponent hit the wall first
DUNGEON	Adventure game
XYGRAPH	Plots line or bar graphs from manually entered data

Nov. meeting notes.

Non Atari memory board report;

Only one person reported having an Axlon 32K board in a 400, there have been no problems with it. (however putting it in will void the warranty on the computer)

Service center report;

Viking Video- minus 1

Bohlig- plus 1

Computer Castle- plus 1

(The minus or plus number simply mean the number of persons having a good[+] or bad[-] service experience, at this point it is not intended as a total endorsment or condemnation of any center.)

Dealers giving discounts to TAIG members- you need your membership card.

#### **Data Cables**

24 East 129th Street  
Burnsville, MN 55337  
890-9488

#### **The Code Room**

7402 Mitchell Rd.  
Eden Prairie, MN 55344  
934-1826

#### **Minnesota Micro Systems**

514 Cedar Ave.  
Mpls. MN 55454  
338-5604

#### **Computer Castle, Inc.**

240 Town Square  
St. Paul, MN 55101  
227-3526

#### **Video Central**

4941 France Ave. S.  
Mpls. MN 55410  
922-6535

It was suggested that the club compile an index of member owned programs for reference.

Pete Asch volunteered to be the TAIG delegate to the Minn. Assn. of Computer Clubs.

## Atari Article Reference

### Analog #2

(update next month)

### Analog #3

(update next month)

### Analog #4

(update next month)

### Byte October

"Atari Tutorial, Part 2: Graphics Indirection", p. 70.

What are the advantages of registers pointing to all the important graphics locations?

Modified character sets and color registers are explained.

"Atari's Telelink", p. 86.

A review of an Atari program that lets the Atari speak to other computers over the phone. (Paraphrase of the manual, and his objections are unfounded. Telelink is worth it, if you have a need for a dumb terminal emulator.)

"The Mauro Proac Plotter", p. 383.

'... the Mauro Proac plotter comes closest to being the ideal small plotter.' \$699 list price.

"Recursive Procedures for the 6502 Microprocessor", p. 467.

For all you machine code wizards, make your algorithms a little more elegant. (Whats recursion? It will become a house hold name as soon as Atari Pascal is released.)

### Byte November

"PDQ: A Data manager for Beginners, Don't Reinvent the Wheel", p.236.

Forget this one if you don't have a disk, otherwise it is a good introduction.

"The Atari Tutorial, Part 3: Player Missile Graphics", p. 312.

All the rehash of previous articles, plus som 'blue sky' uses. If you don't have a technical manual, most of the important memory locations are printed in a very nice format.

"System Notes: A Voice for the Apple II without Extra Hardware", p. 499.

Can anyone convert this over to the Atari? The problem, can one read a value other than 0 or 1 from the cassette?

#### Byte December

"The Atari Tutorial, Part 4: Display List Interrupts", p. 166.  
Advantages of the interrupts and service routines.

#### Byte December

"The Atari Tutorial, Part 4: Display List Interrupts", p. 166.  
Advantages of display list interrupts, service routines, and some 'blue sky' ideas.

"How to Build a Maze", p. 190.  
Algorithm for building mazes explained.

"Byte Game Contest", p. 302.  
Win 500 bucks!

"Byte's Cumulative Index: Sept. '75-Dec. '81", p. 366.  
A Collectors item.

"Clubs and Newsletter", p. 466.  
TAIG makes the 'big time'.

#### Compute September

"Pet, Atari, Apple: On Speaking Terms", p. 36.  
On the differences of each machines BASIC's.

"Positioning Player-Missile and Regular Graphics in Memory", p. 67.  
Tables to aid you with player-missile graphics implemetation.

"Insight: Atari", p. 70.  
Premier column-all about programming.

"The Atari 825: An Assembler Interface", p. 74.  
Assembly program that allows 16.7 cpi printing with the Assembler/Editor cartridge.



"Atari Timing Delays", p. 104.

How to use Atari's built in software countdown/up timers.

"Printing Numbers that Make Cents", p. 108.

An algorithm that gives you  $n^{\text{th}}$  place percision in dealing with all around programming.

"Formatting Input", p. 109.

Method of inputting values in table format.

"Typing Shoot", p. 110.

An enlarged print version of the game previously published.

"TextPlot", p. 114.

A machine language utility that puts text on the screen in any graphics mode.

#### Creative Computing November

"BASIC and Pascal: A Side by Side Comparison", p. 158.

A good place to start, assuming you know BASIC. Remember, about the time you start reading this, Atari should (probably didn't) release their Pascal.

"BASIC Beats Pascal", p. 158.

I can really relate to this artical! Although I was surprised that a Pascal compilier (P-code, that is, Pascal usually compiles down to P-code, and then that is interpreted, like most BASIC programs.) isn't much faster than Microsoft Version 5.0. Also remember, Atari owners, very soon you will have a choice of both for the Atari, and unless you have a large pocket book, or a passion for Atari BASIC, then a decsion will have to be made on which language you want.

"Outpost: Atari", p. 258.

Playing around with colors and display list interrupts.

#### Creative Computing January

"Eastern Front", p. 44.

A review.

"Outposts: Atari", p. 190.

A Beginners guide to character sets, well done with plenty of program examples.

Kilobaud

(Update next month)

Micro

(There is a worth while shoot game in Decembers)

### Softside October

"Leyte", p. 21.

A 16K naval simulation based on the battle of Leyte Gulf.

"Take Apart: Atari Quest", p. 76.

A good explanation of colors in redefined character sets.

"Character Generator", p. 78.

A program that facilitates the creation of custom designed characters.

### Softside November

"Flight of the Bumblebee", p. 3.

A digitalized and animated version of a tune from Rimsky-Korsakoff's 1900 opera, The Tale of the Isar Salton.

"Melody Dice", p. 31.

A 24K Scott Joplin flash card game.

"Atari Volleyball", only on disk version.

32K and four joysticks required.

"Music Programmer", p. 67.

A 32K music editor.

"The Tone Envelope", p. 75.

Another computer buzz word is explained-real short.

"Atari Music Composer", p. 82.

A review of Atari's Music Composer Cartridge. A review of Alf's follows.

"Using the Color and Locate Instruction to Program Pong Type Games", p. 79.

A BASIC pong game.

"Atari BASIC String Sort", p. 80.

A string Shell/Metzner sort.

"Dynamic Player Animation with Atari", p. 82.

Program to demonstrate player-missile graphics with animated players.

"Shoot", p. 86.

The first all machine code (with source listing), arcade (Atari VCS) type game published in a magazine.

"An Efficient A/D Interface", p. 140.

It's much faster than Atari's A/D.

Compute October

"Automatic DATA Statements For CBM And Atari", p. 22.

A neat BASIC program that transcribes a machine language routine in memory to BASIC DATA statements.

"Cassette Boot-Tape Generation from DOS 2.0S Binary Load File", p. 84.

This article explains how to make a cassette (like Space Invaders<sup>TM</sup>) machine language program automatically load and run without any cartridge in the slot.

"Beware of The Ramtop Dragon", p. 90.

How to manipulate the O.S. to set aside a piece of memory so it is not disturbed.

"Documented Atari Bugs", p. 94.

Plagerism of De Re Atari error list on BASIC.

"Graph it On the Atari", p. 96.

A 2K BASIC graphing program (sin functions...).

"Extended Player-Missile Graphics", p. 98.

Hybrid program that improves pm graphics implementation.

"Atari 400/800 Variable Name Utility", p. 101.

A program that prints out the contents of the variable name table.

"Insight: Atari", p. 102.

More on Atari BASIC, concentrating on the RESTORE and GOSUB statements.

"Overview: "Letter Perfect" Word Processing On the Atari", p. 106.

A review, with appendage on Letter Perfect 2.0.

"Atari Disk File Dump", p. 110.

Program that gives a hexadecimal dump of any file on disk.

"Atari Program Library", p. 112.

A huge program that keeps track of all your programs and files, with a machine language sort routine.

"MATCH-A Game of Memory and Timing", p. 117.

memory game like Simon.

"A General Purpose BCD-To-Binary Routine", p. 165.

A machine code subroutine.

### Compute November

"Bits, Bytes, and BASIC Boolean", p. 54.

Novice? Ever wonder what bits and bytes are? Well,

"The Practical Side of Assembly Language, Part II: Loop and Arrays", p. 62.

(Pt. I was in August) Loop control and data array manipulations are discussed.

"Part One: Introduction to Binary Numbers", p. 69.

Oh boy, the last enigma answered!

"Atari Data Management/Database System", p. 82. A huge program that keeps track of records (ie. phone numbers, important dates, etc...).

"Insight: Atari", p. 96.

Ah! Finally a discussion on the Atari Operating System, and how to use it! He even does a half decent job at it!



Zap, there goes another Klaatu

You are in command of a fleet of warships or just one scoutship depending on the scenario you choose in Invasion Orion. This is yet another game written by Automated Simulations. It is different from Datestones of Ryn and Rescue at Rigel though. Unlike those this is not real time. You can sit and think about what your moves will be. You'll need the time!! The computer is your opponent and can play either side. He does do better playing the Klaatu's forces. Invasion Orion is the first war boardgame that I have seen converted for a computer. It was written very well and I think most of you brains out there will enjoy this if you decide to give \$30.00 to the clerk across the counter. Of course, don't do it if you don't have 32K and a cassette! It comes with 2 scenarios already made and instructions on how to build your own. They also include 8 others in the battle manual you can punch in if you want variety. Got to run now, I think they are shooting torpedoes at me!!!

How do you get by a Green Snake?

I found him in Colossal Cave in Analog Adventure. I purchased it last May by mail order direct from Analog. AS you can tell by their delivery of Analog Magazine, I didn't get it for awhile. In fact, it didn't come till the end of August. I don't know if it was worth the wait. The program was written in basic and takes what seems a long time to figure out what you're saying. It accesses the disk everytime you move for a description of your new location (I think by point and note commands?). It comes on a disk and and you need 40K to run it. Analog Adventure was based on the original Adventure written by Willy Crowther and Don Woods at M.I.T. It cost me \$35.00 and 3 months wait. Of course I will make up the difference by not calling up Compuserve to play their Adventure. By the way, do any of you know how to get by the green snake?

BOMB PROGRAM!

Don't throw your money away on the Haunted House marketed by Creative Computing. It is a dull adventure in which you try to find your way out by midnight. There aren't too many objects to find and their door creaking gets on your nerves after awhile. If you have \$12.00 to burn then go buy. But I think you will only play it once or twice and then forget all about it.



Arithmetic conditions - some programming ideas  
By John W. Ward

Chapter 1 (General Information) in the Atari Basic Reference Manual contains the kind of stuff that's too obvious for an experienced programmer to read and too theoretical for the novice. But it's introductory, so I read it and learned something.

If you read between the lines on the bottom of page 4 you discover that arithmetic expressions and logical expressions are the same bird wearing different feathers. Any place one can go, the other will fit. It may look strange, but it's legal. An arithmetic expression (like  $X+Y \times Z$ ) is logically false if it is equal to zero, true if it's not zero. A logical expression (like  $A=1$  OR  $B < C$ ) is arithmetically equal to one if true, zero if false.

Now, how is this useful? Well, logical expressions are required in only about one place, namely IF-THEN statements. Using an arithmetic expression in an IF-THEN statement is only really handy to shorten IF  $A < 0$  to IF A and IF  $A = 0$  to IF (NOT A). IF A could also be useful as a stored condition, when you need the same comparison in several IF-THEN statements and don't want to repeat the test. Thus, the statement  $A = (B < 5)$  followed by many IF A's will require less work for the machine than many IF  $B < 5$ 's. It won't work if B is constantly changing, but you can't have everything.

On the other hand, using logical expressions where you normally see arithmetic has many applications. Consider the use in ON-GOTO or ON-GOSUB. These statements check an arithmetic expression against a list of line numbers and branch appropriately. But what if the list of numbers has only one element? What is the difference between these two lines?

```
10 IF A=B THEN GOTO 100
20 ON (A=B) GOTO 100
```

Answer: no difference! In 10, when A equals B the program branches to 100. In 20, if A equals B then  $(A=B)$  is equal to one (the value for TRUE) and the program branches to element one in the line number list, which happens to be line 100. In 10, if the condition is false the branch is ignored. In 20 the value for FALSE is zero which is illegal for an ON-GOTO list and so the statement is ignored. No difference! Results are the same if we replace the GOTO's with GOSUB's. But what about these two?

```
30 IF X<5 THEN Y=A
31 IF X=5 THEN Y=B
32 IF X>5 THEN Y=C
30 Y=A*(X<5)+B*(X=5)+C*(X>5);REM Plenty of room left on this line
```

```
IF X<5 THEN Y=0
Y=Y*(X>5)
```

```
10 IF A=B THEN GOTO 100:A=A+1
20 ON (A=B) GOTO 100:A=A+1
```

A difference! In 10, that  $A=A+1$  never happens. If A equals B we go 100. If not, we go to the next line number. But in 20, when A is not equal to B, the ON-GOTO is ignored but the program continues on the same line. In effect, ON-GOTO gives you a limited IF-THEN-ELSE capability and saves you some memory-costly line numbers.

What if the GOTO's above were GOSUB's? In 10 we'd perform the routine at 100 and the  $A=A+1$  only if A equals B. In 20, GOSUB 100 happens if  $A=B$ , but  $A=A+1$  always happens. IF-THEN makes everything after THEN conditional, ON-GOSUB only affects the GOSUB.

Now what about  $\text{ON (A=B)+1 GOSUB 100,200:GOSUB 300}$ . If  $A=B$  is false,  $(A=B)+1$  is  $(0)+1$  or one, so we do GOSUB 100. If  $A=B$  is true we have  $\text{ON (1)+1}$ , so we GOSUB 200. Then everybody does the GOSUB 300. Try that with IF-THEN on one line! (A word of caution: the false condition is the first one in the list.)

Sometimes logical expressions may be used as arithmetic for its own sake. Try this almost-a-one-liner with your joystick:

```
1 GRAPHICS 0:COLOR 8:X=20:Y=10:TRAP 1
5 PLOT X,Y:Z=STICK(0):X=X+(Z>4)*(Z<8)-(Z>8)*(Z<12):Y=Y+(Z=5)+(Z=13)+
(Z=9)-((Z=6)+(Z=14)+(Z=10)):GOTO 5
```

or for randomizer fans, keep line 1 but substitute:

```
5 PLOT X,Y:Z=RND(1):X=X+(Z>.7)-(Z<.3):Z=RND(1):Y=Y+(Z>.7)-(Z<.3):GOTO 5
```

Note in the joystick version that  $Z>4$  AND  $Z<8$  (move down) is written as  $(Z>4)*(Z<8)$ . Multiplication replaces the AND. Likewise in the  $Y=Y+....$  calculation addition replaces some OR's.

Some other samples, then you're on your own. (Like line numbers function equally, but the arithmetic equivalent won't require a new line number for code that follows.)

```
10 IF X<5 THEN X=X+1
10 X=X+(X<5):REM More code

20 IF X<5 THEN Y=Y+5
20 Y=Y+5*(X<5):REM More code
```





TWINCITY  
ATA RI  
INTEREST GROUP

6824 QUEEN AVE. SO.  
RICHFIELD, MN 55423



TAIG meeting notice:  
Jan. 3, 1982 7:00 PM  
Minn. Fed. S&L, 31 9th Av. S.  
Hopkins

Basic tutorial  
6:00 PM